

REMARKS

Claims 1-10 are all the claims pending in the application.

I. Claim Rejections Under 35 U.S.C. § 112(2nd):

The Examiner rejects claims 1-10 under 35 U.S.C. § 112(2nd) because they recite terms that are vague, indefinite, and/or lack proper antecedent basis. Applicants have appropriately amended the claims to address the Examiner's concerns. For example, Applicant has amended claim 1 by deleting the objectionable terms "is provided with", "ready for measuring" and "optionalable number of times". Accordingly, the Examiner is respectfully requested to reconsider and withdraw the § 112 (2nd) rejections. In addition, Applicants have revised the claims at their own initiative, for reasons of grammar and U.S. claiming practice.

II. Allowable Subject Matter:

The Examiner indicates that claims 2, 3, 7, and 8 would be allowed if they were rewritten in independent form and to overcome the raised § 112 (2nd) rejections. Applicants do not rewrite these claims, as suggested by the Examiner, because base claims 1 and 6 are believed to be patentable for the reasons discussed in detail below.

III. Claim Rejection on Prior Art Grounds:

The Examiner rejects claims 1, 4-6, 9, and 10 under 35 U.S.C. § 102(e) as being anticipated by U.S. 6,153,101 to Schafer et al. ("Schafer"). Applicants respectfully traverse this rejection in view of the following remarks.

A. *Base Claim 1:*

Base claim 1, which is amended for clarification, recites (among other things):

automatic exchanging means for discharging the ion exchanger from the main body and for supplying a virgin ion exchanger to the main body.

At least this feature, in combination with the other cited claim limitations, is not taught or suggested by the prior art relied upon by the Examiner.

As a preliminary matter, the automatic exchanging means is written is a *means plus function* limitation to evoke treatment under 35 U.S.C. § 112 (6th). Under § 112 (6th), the *means plus function* limitation requires that the prior art element perform the *identical function* specified in the claims.¹

The Examiner relies upon Schäfer to teach all of the features recited in claim 1. Applicants respectfully assert that this grounds of rejection is incorrect. This is because Schäfer does not teach or suggest an element that discharges the ion exchanger from the suppressor and supplies a virgin ion exchanger to the suppressor. Schäfer's disclosure is explicit in this regard.

With reference to Fig. 1 of Schäfer, the disclosed device includes a plurality of branches 9, 10, 10a, each having a gap 34 into which a suppressor 6 is sequentially inserted. The first branch is an analysis branch 9 used for the detection of separated ions in an eluate that has passed through the suppressor 6. Over time, the capacity of the suppressor 6 will be exhausted.

¹ MPEP § 2182.

And therefore, Schäfer provides treatment branches 10, 10a. These treatment branches 10, 10a regenerate the exhausted suppressor 6 by flowing treatment agents 7, 7a there through.²

Importantly, however, the ion exchanger within the suppressor 6 is not discharged during the regeneration process. Certainly then, claim 1 recites features that are practically and conceptually different than Schäfer's device.

The grounds of rejection recognize this fundamental difference between the present invention and Schäfer's device, nevertheless they indicate that claim 1 only requires a capability of replacing used suppressors with suppressors containing "virgin" ion exchange resin. This line of reasoning is simply incorrect, however, because claim 1 is written in a *mean plus function* format. Therefore, the Examiner must give patentable weight to the *function* specified in the claims.

B. Base Claim 6:

Base claim 6, which is amended for clarification, is similar to claim 1 in that it recites (among other things):

automatic exchanging means for discharging a used ion exchanger from the holding section and for supplying the virgin ion exchanger accommodated in the chamber to the holding section.

Consequently, base claim 6 is believed to be patentable for reasons analogous to those noted above with respect to claim 1.

² Schäfer, col. 6, l. 38-48.

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For these reasons, Applicants respectfully assert that claims 1 and 6 are patentable and that claims 2-5 and 7-10 are patentable at least by virtue of their dependencies.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) ~~In an~~An ion chromatography system comprising:

~~wherein a separating mechanism~~a desired ion species in a sample is separated by a

~~separating means;~~

~~an eluted liquid from the separating means is introduced into a suppressor~~

~~means~~mechanism coupled to the separating mechanism, the suppressor mechanism adapted to

receive an eluted liquid from the separating mechanism, the suppressor mechanism having a

main body in which an ion exchanger is held,provided to reduce the electric conductivity of the

eluted liquid from the separating mechanism; and

~~the eluted liquid from the suppressor is introduced into a detector coupled to the~~

suppressor mechanism to detect desired ions in the eluted liquid from the suppressor mechanism;

~~the ion chromatography system being characterized in that the suppressor means is provided with~~

~~a main body for accommodating an ion exchanger ready for measuring; a chamber for~~

~~accommodating a virgin ion exchanger, and~~

~~an~~wherein the suppressor mechanism includes automatic exchanging means ~~which for~~

~~discharges~~discharging a used the ion exchanger from the main body ~~after an optional number of~~

~~times of measurements and supplies~~for supplying the a virgin ion exchanger ~~accommodated in~~

~~the chamber to the main body.~~

2. (Amended) The ion chromatography system according to Claim 1, wherein the main body of the suppressor means comprises mechanism is a 6-way switching rotary valve having ~~3~~ a first rotary groove a, a second rotary groove b and a third rotary groove c, wherein the suppressor mechanism includes a chamber, for accommodating a virgin ion exchanger in a slurry state, coupled to the rotary valve,

wherein the automatic exchanging means includes (1) a liquid transferring tank, which accommodates a transferring liquid for introducing the virgin ion exchanger in a slurry state in the chamber into the rotary valve, and (2) a liquid transferring means for supplying the transferring liquid;

wherein a flow passage from the separating ~~means~~ mechanism is connected to a flow passage to the detector by ~~means of the rotary groove a;~~

wherein a flow passage from the liquid transferring means to the chamber is connected to a flow passage to ~~at the~~ third rotary groove c by ~~means of the~~ second rotary groove b;

wherein a flow passage from the second rotary groove b is connected to a flow passage to a discharge passage leading to the outside of the main body rotary valve by ~~means of the~~ third rotary groove c, and

~~each filter~~ wherein filters, which ~~prevents~~ prevent the passage of ion exchanger from passing through is are respectively provided at (1) a side of the separating ~~means~~ mechanism with respect to the first rotary groove a, at (2) a side of the ~~detecting means~~ detector with respect to the

first rotary groove a, and ~~at~~(3) a side of the third rotary groove c with respect to the second rotary groove b.

3. (Amended) The ion chromatography system according to Claim 1, wherein the main body of the suppressor means comprises mechanism is a tube having ~~both ends~~ a first end and a second end, ~~which are tightly closed~~ the first and the second ends being provided with sealing materials ~~capable of passing through which~~ only a string-like ion exchanger is passable;

wherein the suppressor mechanism includes a chamber, for accommodating a virgin string-like ion exchanger, coupled to the first end of the tube, and

wherein the automatic exchanging means includes a supply means which introduces for introducing the string-like ion exchanger in the chamber into the tube from ~~its one end~~ the first end and ~~discharges it~~ discharging the string-like ion exchanger from the other second end of the tube; and

wherein an input portion of the tube, in the vicinity of one which is located adjacent to the second end of the tube, is connected to a flow passage from the separating ~~means~~ mechanism, and wherein an output portion of the tube, in the vicinity of the other which is located adjacent to the first end of the tube, is connected to the ~~detecting means~~ detector.

4. (Amended) The ion chromatography system according to Claim 1, wherein the automatic exchanging means is to replace replaces the ~~used~~ ion exchanger in the main body by a

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~~new~~with the virgin ion exchanger every time a predetermined number of times of
~~measurement~~detections are performed by the detector.

6. (Amended) An ion exchanging ~~means~~device for holding an ion exchanger
~~which comprises~~ comprising:

a holding section for accommodating an ion exchanger ~~ready for measuring;~~
a chamber for accommodating a virgin ion exchanger; and
~~an automatic exchanging means which discharges~~for discharging a used ion exchanger
from the ~~main body~~holding section ~~after an optional number of times of measurements and~~
~~supplies~~for supplying the virgin ion exchanger accommodated in the chamber to the ~~main~~
~~body~~holding section.

7. (Amended) The ion exchanging ~~means~~device according to Claim 6, wherein
the ~~ion exchanging means comprises~~holding section is a 6-way switching rotary valve having ~~3~~a
first rotary groovegroove a, a second rotary groove b and a third rotary groove c, and

~~a chamber for accommodating a virgin ion exchanger in a slurry state, wherein the~~
automatic exchanging means includes (1) a liquid transferring tank, which accommodates a
transferring liquid for introducing the virgin ion exchanger in a slurry state in the chamber into
the rotary valve, and (2) a liquid transferring means for supplying the transferring liquid.

8. (Amended) The ion exchanging means according to Claim 6, wherein the ~~ion exchanging means comprises~~holding section is a tube having both ends a first end and a second end, which are tightly closed the first and the second ends being provided with sealing materials~~capable of passing through which only a string-like ion exchanger is passable;~~, and

~~a chamber for accommodating a virgin string like ion exchanger, and~~

wherein the automatic exchanging means includes a supply means which introduces for introducing the string-like ion exchanger in the chamber into the tube from its one the first end and discharges it discharging the string-like ion exchanger from the other second end of the tube.

9. (Amended) The ion exchanging means according to Claim 6, wherein the automatic exchanging means is to replace replaces the used ion exchanger in the holding section by a new with the virgin ion exchanger every time a predetermined number of times of measurement detections are performed by a detector coupled to the holding section.